BALASHOV, V.V.; DOLESHAL, P.; KORENMAN, G.Ya.; KOROTKIKH, V.L.; FETISOV, V.N.

Effect of "shape resonances" on channel coupling in nuclear reactions. IAd. fiz. 2 no.4:643-656 O '65. (MIRA 18:11)

1. Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.

L 22530-66 EWT(m)/T

ACC NR: AP6009715 SOURCE CODE: UR/0386/66/003/004/0170/0173

AUTHOR: Fetisov, V. N.

ORG: Institute of Physics im. P. N. Lebedev, Academy of Sciences, SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: Influence of the structure of three-particle nuclei on the photodisintegration cross section

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3, no. 4, 1966, 170-173

TOPIC TAGS: Gamma cross section, Gamma interaction, tritium, helium, wave function, photoeffect, nucleus

ABSTRACT: The author attempts to show the possible cause of the large disparity (by more than a factor of 3) between the theoretical and experimental values of the cross section of the reaction $\gamma + He^3 \rightarrow p + p + n$ (with reaction threshold 7.72 Mev). This is done by analyzing the usual expression for the cross section of the disintegration of He^3 by a γ quantum of given energy and the structure of the wave functions contained in this formula for the cross section. He then obtains the cross sections for the photodisintegration of the nuclei H^3 and He^3 via (γ,

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ppn) channel and via the channel $H^3(He^3)(\gamma,d)n(p)$ under the assumption that the ground state is described by the function of R. H. Dalitz and T. W. Thacker (Phys. Rev. Lett. v. 15, 204, 1965). Plots of the calculated cross section for the reactions $\gamma + He^3 \rightarrow p + d$, $\gamma + H^3 \rightarrow n + d$, $\gamma + He^3 \rightarrow p + p + n$, and $\gamma + H^3 \rightarrow n + n + p$ fit the experimental data with accuracy not worse than 20--30%. This is in contrast with other theoretical conclusions. It is assumed that allowance for the Coulomb distortions of the wave functions in N-d scattering will lead to even better results. The author thanks A. M. Baldin, A. N. Gorbunov, and A. T. Varfolomeyev for continuous support and a discussion of the results, and also V. P. Fomina for the electronic computer calculations. Orig. art. has: 2 figures and 3 formulas.

SUB CODE: 20/ SUBM DATE: 03Jan66/ ORIG REF: 002/ OTH REF: 006

FETISOV, V.U. (L'vov, ul.Chapayeva, d. 3/13)

Diagnosis of malignant neoplasms of the thyroid gland by the puncture method. Klin.khir. no.5:58-61 My '62. (MIRA 16:4)

1. Kafedra fakul'tetskoy khirurgii (zav. - prof. G.G.Karavanov) lechebnogo fakul'teta L'vovskogo meditsinskogo instituta i kafedra gistologii (zav. - zasluzhennyy deyatel' nauki, prof. B.V.Aleshin) Khar'kovskogo meditsinskogo instituta.
(THYROID GLAND--CANCER)

FETISOV, V. V. ENGR.

189T24

USSR/Electricity - DC Machines May 51
Commutation

"Experimental Research on the Commutation Reactance of the Armature in DC Machines," V. V. Fetisov, Engr, Leningrad Polytech Inst imeni Kalinin

"Elektrichestvo" No 5, pp 41-47

Cites methods for exptl detn of the commutation reactance of the armature which make it possible to exam commutation reactance in both steady-state and transient operating conditions. Supplies some results of research done

189T24

USSR/Electricity - DC Machines May 51
Commutation (Contd)

in the Elec-Mach Lab, Leningrad Polytech Inst, which confirm applicability of described methods. Submitted 4 Aug 50.

189T24

FETISOV, V. V.

The following is among dissertations of the Leningrad Polytechnic Institute imeni Kalinin:

"Sudden Short-Circuiting of Direct-Current Generators." 11 February 1952. A series of substantial results has been obtained with regard to the theoretical and experimental investigations of individual phenomena (transverse and commutation reaction of the armature, transition drop in voltage, eddy currents, inductances of the windings of the machine, potential curve on the commutator) and the very process of short-circuiting. These results can be suitable in an investigation of other cases of short-circuiting in machines of other types and also in the investigation of other types of transition processes in dc machines.

SO: M-1048, 28 Mar 56

PETISOV, V.V.

Potential curve around a commutator and its influence on flashover. Elektrichestvo '53, No.2, 25-9. (MLRA 6:3)
(EEA 56 no.672:4728 '53)

FETISOV, V, V,

Electrical Engineering Abstracts
May 1954
Machines.

1683. Brush voltage drop and brush losses in a d.c. machine with commutation troubles. V. V. Fetisov. *Elektrichestvo*, 1953, *No.* 8, 23–31. *In Russian.*

Commutation troubles in a d.c. machine may occur under heavy overloads and in transient conditions for various reasons, such as saturation of the cores of the compoles, damping effects on the commutating flux of eddy currents, the transformer e.m.f. induced in the short-circuited sections by the variations of the main flux, etc. In such cases the reactive e.m.f. in the commutating sections is partly or completely uncompensated and the brush drop increases. The author shows that the only possible method of analysing these effects is to consider the energies converted or liberated, the latter being capable of producing commutator flashovers. He derives yields relations for the determination of brush drops and commutation losses during transient processes and overload periods, regardless of the type of armature winding and for any given conditions of commutation. The experimental part describes an indirect, but very precise, method of measuring the brush drop, suitable for steady and transient states. The machine is separately excited during the tests, and this principle is also applied to the compoles, so that the measurements can be carried out for artificially produced conditions simulating any case which may arise in actual service. B. I. KRAUS

9 3.7

Leningrad Polytech. Inst. im. Kalinin

FETISOV, V.V.

AID P - 1598

Subject : USSR/Electricity

Card 1/1 Pub. 27 - 7/27

Author : Fetisov, V. V., Kand. of Tech. Sci., Dotsent, Leningrad

Title : Experimental determination of the armature reaction in d-c machines

Periodical : Elektrichestvo, 3, 33-36, Mr 1955

Abstract : The author presents an experimental method, based on the determination of the resultant flux from saturation curves. Tests are made with a GM-282-type, 118-kw, 440-v, 300-a, 1000-rpm, d-c generator with separate excitation. The author concludes that his method can be used under steady state and transient conditions, and is most exact under overloads. Seven diagrams, 5 Russian references (1950-1953)

Institution: Leningrad Polytechnical Institute im. Kalinin

Submitted : N 20, 1954

FETISOV, V.V., kandidat tekhnicheskikh nauk.

Effect of armature reaction on the leakage field of main poles and on leakage inductance of the field winding in direct-current machines. Vest. elektroprom. 27 no.4:60-64 Ap '56. (MLRA 9:11)

1. Leningradskiy politekhnicheskiy institut imeni M. I. Kalinina.
(Electric machinery)

SOV/105-58-7-5/32

AUTHORS: Pruss-Zhukovskiy, V. V., Engineer
Fetisov, V. V., Docent, Candidate of Technical Sciences (Leningrad)

TITLE: Compensation of the Effective Resistance in the Rotor Circuits of Model System Synchronous Generators (Kompensatsiya aktivnogo soprotivleniya v tsepi rotora sinkhronnykh generatorov elektrodinamicheskikh modeley)

PERIODICAL: Elektrichestvo, 1958, Nr 7, pp. 19-24 (USSR)

ABSTRACT: At present a considerable number of electrodynamic models is in operation in a number of scientific institutes (MEI, LPI, IEM, AN SSSR, ENIN AN UzSSR, ZSFAN SSSR and others). By means of these models problems in connection with electric transmission are solved. All these models have single-phase collector generators as a necessary element. The experience obtained with the use of such generators in electrodynamic models of the IEM AS USSR and the LPI imeni M. I. Kalinin which were produced under the supervision of M. P. Kostenko, Member, Academy of Sciences, USSR, is generalized here. During

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Compensation of the Effective Resistance in the Rotor Circuits of Model System Synchronous Generators

the operation of electrodynamic models, the single-phase collector-generators must meet the following requirements: 1) Constancy of the compensation resistance in the case of both static and dynamical operation within the given range of current variation in the model rotor of the generator. 2) Possibility of a gradual control of the compensation resistance. 3) Stability of operation. 4) A permissible value of the inductive resistance according to the conditions holding for the parameters of the model generator. 5) Simple and convenient construction. 6) Low cost and 7) high reliability in operation. For the purpose of analysing the operational conditions of a single-phase collector generator used as a compensator in the electrodynamic model, the process taking place at connecting the rotor circuit to the model-generator during free motion is investigated. It is shown that the connection of the compensator is equivalent to the introduction of a negative effective resistance R_k and of a certain additional inductance L_k into the circuit of the model generator. E_k - the EMF of the compensator, L_k - the inductance of the collector generator. The formula (3) derived here for

Compensation of the Effective Resistance in the Rotor Circuits of Model System Synchronous Generators

the EMF of the exciter E_E shows that the introduction of a negative resistance R_k makes it possible to determine the value of the total effective resistance of the generator-rotor circuit given according to the model conditions. In order to obtain a constant degree of compensation (decrease of the total resistance in the case of compensation), it is necessary to have a linear dependence $E_k = f(i_f)$ and a constant total resistance $r_{f\Sigma}$. A number of factors influencing the value of the compensation resistance is shown. The instability of operation of the collector generator is described by means of a diagram. The two causes for this instability - the hysteresis and the change of resistance of the brush contacts are investigated and the measures guaranteeing a satisfactory operation of the collector generators are shown. As practical operation, these measures are sufficiently effective and make it possible to obtain a practically constant compensation resistance in those cases where the degree of compensation is not very high. At present, a considerable number of collector generators was manufac-

Compensation of the Effective Resistance in the Rotor Circuits of Model System Synchronous Generators

tured on the basis of normal d.c. motors of the type П Н. Summarizing, it is stated that the single-phase collector generator may be successfully used for the compensation of the effective resistance of rotor circuits in alternators of electrodynamic models. There are 5 figures, 1 table, and 4 references, 4 Soviet references.

SUBMITTED: September 7, 1957

1. Impedance--Measurement 2. Generators--Performance

Card 4/4

SOV/144-58-8-17/18

AUTHORS: Fetisov, V.V. and Preiss-Zhukovskiy, V.V.

TITLE: New Method of Experimental Determination of the Optimum Parameters of Additional Poles of DC Machines (Novyy metod eksperimental'nogo opredeleniya optimal'nykh parametrov dobavochnykh polyusov mashin postoyannogo toka) (Comments on a Paper of Ye.M. Sinel'nikov and A.G. Nazikyan, published in Nr 4 issue of this journal) (Stat'ya Ye.M. Sinel'nikova i A.G. Nazikyana, "Elektromekhanika", Nr 4)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Elektromekhanika, 1958, Nr 8, pp 134 - 136 (USSR)

ABSTRACT: The authors of the contribution arrive at the conclusion that the new method of experimental determination of the optimum parameters of additional poles, proposed in the original article, is applicable for setting of the commutation of series-connected machines in cases in which reliable commutation can be obtained by appropriate regulation of the air gap or the numbers of turns of the additional pole. This new method does not substitute the method of spark-free zones, particularly in the case of setting the commutation of large DC machines with difficult

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New Method of Experimental Determination of the Optimum Parameters of Additional Poles of DC Machines (Comments on a Paper of Ye.M. Sinel'nikov and A.G. Nazikyan, Published in Nr 4 Issue of this Journal)

conditions of commutation and during commutation studies. The basic equations derived by the authors from the simplified theoretical assumptions of the method which they present are confirmed by a more accurate analysis of the problem.
There are 7 Soviet references.

ASSOCIATION: Leningradskiy politekhnicheskiy institut (Leningrad Polytechnical Institute)

SUBMITTED: August 30, 1958

FETISOV V.V

BOBROV, V.M.; VORONOV, A.A.; GLEBOV, I.A.; IVANOV, V.I.; KARPOV, G.V.; KASHTELYAN, V.Ye.; SEMENOV, V.V.; SIROTKO, V.K.; SIRYY, N.S.; SUKHANOV, L.A.; URUSOV, I.D.; FETISOV, V.V.; FOMINA, Ye.N.; KOSTENKO, M.P., akademik, red.; DOLMATOV, P.S., red.izd-va; SMIRNOVA, A.V., tekhn.red.

[Electrodynamic modeling of power engineering systems] Elektrodinamicheskoe modelirovanie energeticheskikh sistem. Pod red. M.P.Kostenko. Moskva, 1959. 406 p. (MIRA 13:2)

1. Akademiya nauk SSSR. Institut elektromekhaniki.
(Electric networks--Electromechanical analogies)

FETISOV, V.V.

Equivalence of a massive section of a magnetic conductor in a system of short-circuited coils with laminated cores. Trudy LPI no. 209:338-351 '60. (MIRA 14:2)
(Electric machinery) (Cores (Electricity))
(Electric currents, Eddy)

FETISOV, Viktor Vladimirovich, kand.tekhn.nauk, dotsent

Potential between the adjacent collector plates in d.c. machinery with two-way loop windings. Izv. vys. ucheb. zav.; elektromekh. 3 no.6:49-65 '60. (MIRA 15:5)

1. Kafedra elektricheskikh mashin Leningradskogo politekhnicheskogo instituta.

(Electric machinery—Direct current)

FETISOV, V.V., kand.tekhn.nauk, dotsent

Calculation of the magnetomotive force of the commutation reaction in d.c. machines for brush overlap greater than unity. Elektrichestvo no.5:46-50 My '60. (MIRA 13:9)

1. Leningradskiy politekhnicheskiy institut.
(Electric machinery) (Rotating amplifiers)

FETISOV, V.V.

Calculation of excitation and quenching processes of the magnetic field of d.c. generators with massive stators. Trudy LPI no. 209:352-370 '60. (MIRA 14:2)
(Electric generators)

FETISOV, Viktor Vladimirovich, kand.tekhn.nauk, dotsent

Potential between the adjacent collector plates in d.c. machinery with three-way loop windings. Izv. vys. ucheb. zav.; elektromekh. 3 no.9:118-137 '60. (MIRA 15:5)

1. Kafedra elektricheskikh mashin Leningradskogo politekhnicheskogo instituta.
(Electric machinery—Direct current)

VEGNER, Otto Germanovich; FETISOV, V.V., retsenzent; USSER, A.S., red.; SOBOLEVA, Ye.M., tekhn. red.

[Theory and practice of commutation in d.c. machinery] Teoriia i praktika kommutatsii mashin postoiannogo toka. Moskva, Gos. energ. izd-vo, 1961. 271 p. (MIRA 14:7)
(Electric machinery—Direct current) (Commutation (Electricity))

SUKHANOV, L.A. (Leningrad); FETISOV, V.V. (Leningrad); SIDEL'NIKOV, B.V. (Leningrad)

Methodology for calculating electromechanical transient processes in multiengine systems with consideration of nonlinear characteristics. Izv. AN SSSR. Otd. tekh. nauk. Energ. i avtom. no.3: 73-83 My-Je '62. (MIRA 15:6)

(Electric machinery)

FETISOV, V.V. (Leningrad); KVARTAL'NOV, B.V. (Leningrad); IVANOV, Yu.Ya. (Leningrad); PINCHUK, V.M. (Leningrad); TIKHOMIROV, A.N. (Leningrad)

Generator-motor inverse d.c. to a.c. converter. Izv. AN SSSR. Otd. tekh. nauk. Energ. i avtom. no.4:32-39 Jl-Ag '62. (MIRA 15:8)

(Electric current converters)

FETISOV, Viktor Vladimirovich, kand. tekhn. nauk, dotsent

Study of the magnetic field of the auxiliary poles of d.c. machines subject to overloads and shock loads. Izv. vys. ucheb. zav.; elektromekh. 5 no.6:693-704 '62. (MIRA 15:10)

1. Kafedra elektricheskikh mashin Leningradskogo politekhnicheskogo instituta.

(Electric machinery—Direct current)
(Magnetic circuits)

FETISOV, Viktor Vladimirovich, kand. tekhn. nauk, dotsent

Calculation of the inductance of the rotor circuit of a non-compensated d. c. machine with consideration of the saturation of the toothed zone. Izv. vys. ucheb. zav.; elektromekh. 5 no.11:1247-1258 '62. (MIRA 16:1)

1. Kafedra elektricheskikh mashin Leningradskogo politekhnicheskogo instituta.

(Electric machinery—Direct current)
(Magnetic circuits)

L [illegible]-65 EPA(s)-2/EWT(1)

ACCESSION NR: AT5004636 S/2563/64/000/241/0033/0040

AUTHOR: Fetisov, V. V.; Sidel'nikov, B. V.; Ivanov, Yu. Ya.

TITLE: Investigation of the excitation system of the synchronous machine which is a part of a reversible MG set

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy, no. 241, 1964. Elektromashinostroyeniye (Electrical machinery manufacture), 33-40

TOPIC TAGS: synchronous machine, MG set, rectifier exciter

ABSTRACT: Phase-compounding and current-compounding rectifier-excitation circuits are briefly described; it is shown that the latter is simpler and more reliable; also, it provides for a stronger forcing of the excitation under transient conditions. The current-compounding circuit (see Enclosure 1) was experimentally tested. The synchronous-machine excitation winding was supplied from two rectifier units: a "voltage unit," which ensured the excitation under no-load

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ACCESSION NR: AT5004636

conditions, and a "current unit" (compounding), which supplied the excitation current depending on the load. Under variable pf conditions, the proper voltage was maintained by an automatic voltage regulator which included a 3-phase magnetic amplifier, a detector, and a voltage-frequency compensation circuit. The detector was represented by a nonlinear resonant circuit which included a [illegible] capacitor, and [illegible] machine proved the reliability, stability, [illegible] dynamic characteristics of the current-compounding system. Orig. art. has: [illegible] formulas.

ASSOCIATION: Leningradskiy politekhnicheskiy institut im. M. I. Kalinina (Leningrad Polytechnic Institute)

SUBMITTED: 00 ENCL: 01 SUB CODE: EE

NO REF SOV: 006 OTHER: 000

FETISOV, Viktor Vladimirovich, kand.tekhn.nauk, dotsent; SIDEL'NIKOV, Boris Viktorovich, assistent; YUSHCHENKO, Anatoliy Grigor'yevich, inzh.

Calculating sudden short-circuiting in a d.c. machine using an analog computer. Izv.vys.ucheb.zav.; elektromekh. 7 no.11:1311-1320 '64. (MIRA 18:3)

1. Kafedra elektricheskikh mashin Leningradskogo politekhnicheskogo instituta (for Fetisov, Sidel'nikov). 2. Leningradskiy politekhnicheskiy institut (for Yushchenko).

FETISOV, V.V., kand. tekhn. nauk; LEMBERG, A.Ya., inzh.

Choice of the parameters of three-way singularly short-circuited loop windings of d.c. machines. Elektrotekhnika 35 no.11:59-63 N '64. (MIRA 18:6)

FETISOV, Viktor Vladimirovich, kand. tekhn. nauk, dotsent

Answer to the comments of M.S.Mikhailov-Mikulinski. Izv.vys.ucheb. zav.; elektromekh. 7 no.11:1394-1395 '64. (MIRA 18:3)

1. Kafedra elektricheskikh mashin Leningradskogo politekhnicheskogo instituta.

SIDEL'NIKOV, Boris Viktorovich, assistent; SUKHANOV, Lev Aleksandrovich, kand. tekhn.nauk, starshiy nauchnyy sotrudnik; YUSHCHENKO, Anatoliy Grigor'yevich, inzh.; FETISOV, Viktor Vladimirovich, kand.tekhn.nauk, dotsent

Analysis of transient processes in a two-speed induction motor with a choke in the stator circuit and intermittent power supply. Izv.vys. ucheb.zav.; elektromekhanika 8 no.6:644-654 '65.

(MIRA 18:8)

1. Kafedra elektricheskikh mashin Leningradskogo politekhnicheskogo instituta (for Sidel'nikov, Fetisov). 2. Institut elektromekhaniki, Leningrad (for Sukhanov). 3. Leningradskiy politekhnicheskiy institut (for Yushchenko).

L 12995-66 EWT(1)/FCC/EWA(h) GW

ACC NR: AR6000794 SOURCE CODE: UR/0169/65/000/009/A013/A013

SOURCE: Ref. zh. Geofizika, Abs. 9A75

70
B

AUTHOR: Mandel'shtam, S. L.; Vasil'yev, B. N.; Voron'ko, Yu. K.; Tindo, I. P.; Shurygin, A. I.; Fetisov, Ya. N.

TITLE: Using artificial satellites and rockets to study the short-wave end of the solar spectrum

CITED SOURCE: Tr. Komis. po spektroskopii. AN SSSR, vyp. 1, 1964, 36-54

TOPIC TAGS: solar radiation, artificial earth satellite, solar corona

TRANSLATION: Solar radiation was experimentally and theoretically studied in the spectral region with wavelengths shorter than 10 angstroms. It was found that the radiation has a continuous spectrum and is due to recombination of electrons and "heavy" ions in the solar corona. Various experimental measurements of the electron temperature in the radiating regions of the corona gave values lying between 1.5 and $4 \cdot 10^{6}$ Kelvin; the radiation flux at the boundary of the terrestrial atmosphere is $2\text{-}8 \cdot 10^{-4}$ erg/cm^2·sec.

SUB CODE: 08, 22/

Card 1/1 HW

UDC: 523.72:629.195.2:629.192.2/3

L 33282-66 EWT(1)/FSS-2 TT/GW

ACC NR: AR6017229 SOURCE CODE: UR/0058/65/000/012/D023/D023

AUTHORS: Mandel'shtam, S. L.; Vasil'yev, B. N.; Voron'ko, Yu. K.; Tindo, I. P.; Shurygin, A. I.; Fetisov, Ya. K. 64 B

TITLE: Investigations of the short-wave end of the solar spectrum with the aid of satellites and rockets 12

SOURCE: Ref. sh. Fizika, Abs. 12D177

REF SOURCE: Tr. Komis. po spektroskopii. AN SSSR, t. 3, vyp. 1, 1964, 36-54

TOPIC TAGS: solar spectrum, solar corona, solar radiation, geophysic rocket, scientific satellite

ABSTRACT: The radiation of the sun was investigated experimentally and theoretically in the spectral region below 10 Å. It is established that this radiation has a continuous spectrum and is due to recombination of electrons and "heavy" ions in the solar corona. The measurements of the electron temperature of the radiating regions of the corona in different experiments yielded values between 1.5 and 4 x 10^6 °K; the flux of radiation at the limit of the earth's atmosphere is 2 - 8 x 10^{-4} erg/cm^2-sec. [Translation of abstract]

SUB CODE: 03, 22/

Card 1/1

SOV/51-7-4-18/32

AUTHORS: Van Si-fu, Silin, V.P. and Fetisov, Ye.P.

TITLE: On the Optical Properties of Metal Films in the Region of Anomalous Skin Effect.

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 4, pp 547-551 (USSR)

ABSTRACT: Thin films can be used to determine optical constants of conductors. Theory of the optical properties of films has usually neglected anomalous skin effect, which is very important in many metals (Refs 2-4). The authors fill this gap by considering optical properties of metal (conducting) films in the case when the surface losses due to the diffuse scattering of electrons at the surface cannot be neglected. Formulae are given for the phase-shifts of reflected (α) and transmitted (β) waves for the reflection (R) and transmission (T) coefficients and the absorption coefficient A = 1 - R + T. They are given both for s-polarization (Eqs 7-11) and p-polarization (Eqs 12-16). The formulae simplify considerably in the limiting cases of very

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On the Optical Properties of Metal Films in the Region of Anomalous Skin Effect

thin films and massive conductors. Further simplification occurs when the real part of permittivity is considerably larger than unity. The paper is entirely theoretical. There are 6 references, 3 of which are Soviet, 1 English, 1 Dutch and 1 mixed (Soviet, English and German).

SUBMITTED: February 18, 1959

26417
S/056/61/041/001/012/021
B102/B214

9.9100
24.2120

AUTHORS: Silin, V. P., Fetisov, Ye. P.

TITLE: The electromagnetic properties of a relativistic plasma.III

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 1(7), 1961, 159-170

TEXT: This paper gives a detailed theoretical study of the reflection and absorption of electromagnetic radiation incident obliquely on the plane boundary surface of an electron plasma. The case of perpendicular incidence has been exhaustively investigated already. A semi-infinite isotropic plasma (without constant field) with arbitrary (in the special case: relativistic) distribution of particles is considered. Not only the losses related to the appearance of transverse fields in the plasma are considered, but also the excitation of longitudinal waves and the losses related to them. To study the electromagnetic properties of the electron plasma (the ions form a homogeneous background) the usual kinetic equation with self-consistent field is used:

$$\frac{\partial \delta f}{\partial t} + v\frac{\partial \delta f}{\partial r} + eE\frac{\partial f_0}{\partial p} = -\nu\delta f. \qquad (1)$$

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The electromagnetic properties of ...

where f_0 is the equilibrium distribution function of the electrons, f the non-equilibrium addition, and ν the collision frequency. In the case of mirror reflection of the electrons by the plasma surface the solution of (1) is given by

$$\delta f = -\frac{e}{v_z} f_0' \int_z^\infty dz' \exp\left\{-\frac{z-z'}{v_z}\chi\right\} \nu E(z'), \quad v_z < 0, \tag{3}$$

$$\delta f = \frac{e}{v_z} f_0' \int_0^z dz' \exp\left\{-\frac{z-z'}{v_z}\chi\right\} \nu E(z') + \frac{e}{v_z} f_0' \int_0^\infty dz' \exp\left\{-\frac{z+z'}{v_z}\chi\right\} \times$$
$$\times (E_x v_x + E_y v_y - E_z v_z), \quad v_z > 0.$$

where $\chi = \nu - i\omega(1 - v_y \sin\theta/c)$, f_0' is an arbitrary equilibrium energy distribution function, and θ the angle of incidence. The longitudinal and transverse dielectric constants are given by:

$$\varepsilon'(\omega, k) = 1 + \frac{4\pi e^2}{\omega k^2} \int dp \frac{(kv)^2 f_0'}{\omega + i\nu - kv}. \tag{5}$$

$$\varepsilon'(\omega, k) = 1 + \frac{2\pi e^2}{\omega k^2} \int dp \frac{(kv)^2 f_0'}{\omega + i\nu - kv}. \tag{6}$$

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The electromagnetic properties of ...

In the following the case of s-polarization (electric vector of the incident wave perpendicular to the plane of incidence) is considered. For the effective depth of penetration

$$\lambda_s^{mir} = \frac{ic}{\omega}(1+\alpha^t)(\varepsilon(\omega)-(1+\alpha^t)\sin^2\theta)^{-1/2} \quad \text{with}$$

$$\varepsilon'(\omega, k) = \varepsilon(\omega) - \alpha' c^2 k^2/\omega^2 = 1 - \omega_0^2/\omega^2 - \alpha' c^2 k^2/\omega^2 + i\nu\omega_0^2/\omega^3;$$

$$\omega_0^2 = -\frac{4\pi e^2}{3}\int dp v^3 f_0', \qquad \alpha' = -\frac{4\pi e^2}{15}\int \frac{v^4 f_0'}{c^2\omega^2}\,dp. \tag{9}$$

the contributions $\delta\lambda_s^{mir}$ due to the existence of a branching point of the dielectric constant are given for relativistic, nonrelativistic, and ultra-relativistic cases (all for mirror reflection). The case of diffuse reflection of the electrons by the plasma surface is analogous; one obtains

$$\lambda_s^{(D)} = \left\{\frac{1}{\pi}\int_0^\infty dq \ln\left[1 - \frac{\omega^2}{c^2 q^2}(\varepsilon'(\omega, k) - \sin^2\theta)\right]\right\}^{-1}. \tag{19}$$

Card 3/7

The electromagnetic properties of ...

In the following, the p-polarization (electric vector of the incident wave in the plane of incidence) is considered. In this case longitudinal waves may appear in the plasma which is not possible for s-polarization. Here, the field in the plasma is characterized by:

$$E_y(z) = E_y^r(z) + E_y^i(z), \qquad (22)$$

$$E_y^i(z) = \left\{E_y'(0) - i\frac{\omega}{c}\sin\theta E_x(0)\right\} \times$$

$$\times \frac{1}{\pi}\int_{-\infty}^{+\infty} \frac{dqq^2 e^{iqz}}{[q^2 + (\omega/c)^2\sin^2\theta]\,[(\omega/c)^2\varepsilon^i(\omega, k) - (\omega/c)^2\sin^2\theta - q^2]}, \qquad (23)$$

$$E_y^i(z) = \left\{E_y'(0) - i\frac{\omega}{c}\sin\theta E_x(0)\right\}\frac{1}{\pi}\int_{-\infty}^{+\infty} \frac{dq\,\varepsilon\sin^2\theta\, e^{iqz}}{[q^2 + (\omega/c)^2\sin^2\theta]\,\varepsilon^i(\omega, k)}. \qquad (24)$$

the complex reflection coefficient is given by

$$r_p = \frac{\cos\theta - Z_p(c/4\pi)}{\cos\theta + Z_p(c/4\pi)}, \qquad (25)$$

Card 4/7

Here, the effective depth of penetration is obtained additively from the transverse and longitudinal ones:

$$\lambda_p^t = -\frac{1}{\pi}\int_{-\infty}^{+\infty} \frac{dqq^2}{[q^2+(\omega/c)^2\sin^2\theta]\,[(\omega/c)^2\varepsilon_+^t(\omega,k)-(\omega/c)^2\sin^2\theta-q^2]}, \quad (27)$$

$$\lambda_p^l = -\frac{\sin^2\theta}{\pi}\int_{-\infty}^{+\infty} \frac{dq}{[q^2+(\omega/c)^2\sin^2\theta]\,\varepsilon^l(\omega,k)}. \quad (28)$$

The contributions to the left-hand sides of these formulas due to dielectric constant branching are:

$$\delta\lambda_p^t = -\frac{2l}{\pi}\frac{c}{\omega}(1+i\nu/\omega)\int_1^\infty \frac{dx}{x}\left[x^2-\sin^2\theta\left(\frac{\omega}{\omega+i\nu}\right)^2\right]^{1/2}\operatorname{Im}\varepsilon_+^t\left(\omega,\frac{\omega+i\nu}{c}x\right)\times$$
$$\times\left\{\left[\operatorname{Re}\varepsilon_+^t\left(\omega,\frac{\omega+i\nu}{c}x\right)-(1+i\nu/\omega)^2x^2\right]^2+\left[\operatorname{Im}\varepsilon_+^t\left(\omega,\frac{\omega+i\nu}{c}x\right)\right]^2\right\}^{-1}, \quad (36)$$

$$\delta\lambda_p^l = -\frac{2l}{\pi}\frac{\sin^2\theta}{(1+i\nu/\omega)}\frac{c}{\omega}\int_1^\infty dx\,\operatorname{Im}\varepsilon_+^l\left(\omega,\frac{\omega+i\nu}{c}x\right)\Big|\varepsilon_+^l\left(\omega,\frac{\omega+i\nu}{c}x\right)\Big|^{-2}\times$$
$$\times\left[x^2-\sin^2\theta\left(\frac{\omega}{\omega+i\nu}\right)^2\right]^{-1/2}, \quad (37)$$

Card 5/7

The electromagnetic properties of ...

Here again a special case is investigated. If $\alpha^1 < \varepsilon'(\omega) \ll 1$, $25N_eL^2 \ll T_e^4 \sin^2\theta(1-\omega_{Le}^2/\omega^2)$, where T_e is the electron temperature in °K, N_e the number of electrons per cm^3, and L the Coulomb logarithm, one obtains for the absorptivity of the plasma:

$$A^{(p)} = \frac{4\cos\theta\sin^2\theta\sqrt{\alpha'\varepsilon''(\omega)}}{[\varepsilon'^{1/2}\cos\theta + \sqrt{\alpha'}\sin^2\theta]^2 + (-1+\sin^2\theta/\varepsilon')\varepsilon''}. \quad (45)$$

If, in addition, $(\varepsilon')^3 \gg \alpha^1$, one has

$$A^{(p)} = \frac{4\sqrt{\alpha'\varepsilon'(\omega)}}{1-\varepsilon'(\omega)} \frac{\cos\theta\sin^2\theta}{\sin^2\theta - \varepsilon'(\omega)\cos^2\theta}. \quad (46)$$

The heat released per cm^3 at a depth z on account of the absorption of transverse waves is given by:

$$\frac{Q'}{V} = \frac{\omega}{8\pi}\left(\frac{\nu}{\omega}\frac{\omega_0^2}{\omega^2}\right)|1+r_p|^2 |H_x(0)|^2 \exp\left\{-\frac{z\nu}{c}\frac{\omega_0^2/\omega^2}{[\varepsilon'(\omega)-\sin^2\theta(1+\alpha')]^{1/2}}\right\}, \quad (47);$$

for transverse waves one has analogously

Card 6/7

The electromagnetic properties of ...

$$\frac{Q'}{V} = \frac{\omega}{8\pi}\varepsilon''|1+r_p|^2|H_{x1}(0)|^2\exp\left\{-\frac{z\omega}{c\sqrt{\alpha'}}\frac{\varepsilon''}{[\varepsilon'-\alpha'\sin^2\theta]^{1/2}}\right\},$$

$$\varepsilon'' = \frac{\nu_{эфф}\omega_{Le}^2}{\omega^3} + \sqrt{\frac{\pi}{2}}\frac{\omega\omega_{Le}^2}{k^2(\varkappa T_e/m)^{1/2}}\exp\left(-\frac{\omega^2 m}{2k^2\varkappa T_e}\right). \quad (48).$$

The asymptotic behavior of the field for large z is investigated in an appendix. There are 7 references: 6 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Institute of Physics imeni P. N. Lebedev of the Academy of Sciences USSR)

SUBMITTED: January 4, 1961

Card 7/7

SILIN, V.P.; FETISOV, Ye.P.

Transient radiation and collective oscillations in metallic films. Zhur. eksp. i teor. fiz. 45 no.5:1572-1580 N '63. (MIRA 17:1)

1. Fizicheskiy institut imeni Lebedeva AN SSSR.

FETISOV, Ye.P.

Radiation from the solar corona in the soft X-ray region. Kosm. issl. 1 no.2:209-215 S-O '63. (MIRA 17:4)

ACCESSION NR. AP4032723 S/0033/64/041/002/0299/0301

AUTHOR: Fetisov, Ye. P.

TITLE: Radiation of solar corona in the spectral region shorter than 10Å

SOURCE: Astronomicheskiy zhurnal, v. 41, no. 2, 1964, 299-301

TOPIC TAGS: solar corona, coronal radiation, ion concentration, chemical element, radiation intensity, linear radiation, continuous radiation, recombination, electron density, hydrogen, helium

ABSTRACT: The intensity of coronal radiation depends upon the concentration of ions of chemical elements in the corona. Computations of radiation intensities are performed using Elwert formulas for ionization and Ivanov-Kholodny*y and other formulas for recombination. Results obtained by both methods do not markedly differ. Radiation flux as well as continuous and linear radiation is proportional to the square of electron density in the corona. The recombination radiation maybe increased through transitions to higher levels.

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ACCESSION NR. AP4032723

The linear radiation is assumed to be caused by ion excitation due to collisions with electrons. The intensity of linear radiation as well as of continuous radiation of heavy elements and also of hydrogen and helium in the range shorter than 10A is computed and given in a table. The tabular data show a predominance of continuous radiation. Ion recombinations of heavy elements at temperatures up to 3,000,000°K produce the major fraction of the radiation flux. Orig. art. has: 1 table

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR(Institute of Physics im. P. N. Lebedev, Academy of Sciences SSSR)

SUBMITTED: 11Feb63 DATE ACQ: 11May64 ENCL: 00

SUB CODE: AS NO REF SOV: 002 OTHER: 002

Card 2/2

L 20965-66 EWT(1)/FCC/EWA(h) GW

ACCESSION NR: AP5026054

UR/0293/65/003/005/0737/0750
523.72:629.192.2:550.3

AUTHOR: Mandel'shtam, S. L.; Prokudina, V. S.; Tindo, I. P.; Fetisov, Ye. P.

TITLE: On the x-radiation of the quiet sun

SOURCE: Kosmicheskiye issledovaniya, v. 3, no. 5, 1965, 737-750

TOPIC TAGS: sun, solar emission, quiet sun, solar x radiation, solar physics, solar activity, disturbed sun

ABSTRACT: The results of computations of the thermal x-radiation of the sun in the wavelength region shorter than 20 Å are examined, and the computed values of radiation fluxes compared with experimental data. To obtain a "volumetric measure of the emission" of the various regions of the corona that enter into the computational data, experimental values based on radiospectroheliograms at a wavelength of 9.1 cm are used. The temperature of the undisturbed corona is taken as $\sim 1 \cdot 10^6$ K, while for regions having an increased measure of emission temperature, values lying within the limits of $1.5—2.5 \cdot 10^6$ K are assigned. Computational and experimental values of x-ray flux are in good agreement for different levels of solar activity, sugessting that the solar x-radiation in the region $\lambda < 20$ Å is of a thermal nature. It is composed of the virtually constant component emitted

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L 20965-66
ACCESSION NR: AP5026054

from undisturbed coronal regions to which the slowly changing component, corresponding to "hotter" radiation from active coronal regions, is superimposed. This latter component changes greatly depending on the number and size of the active regions. It is noted that while both the active and quiet regions make comparable contributions in the decimeter radio range, the contributions of the quiet regions are negligible in the x-ray region at $\lambda < 20$ Å. Therefore, no proportionality can be expected between the total flux of radio and x-radiation. To verify these findings, it is planned to scan the solar disk in two spectral ranges, viz, 2—10 and 8—18 Å. This will make it possible to determine T_e and N_e simultaneously but independently, and to compile a chart showing the distribution of N_e and T_e over the solar disk. Orig. art. has: 3 figures, 7 tables, and 7 formulas. [DM]

ASSOCIATION: none

SUBMITTED: 16May64 ENCL: 00 SUB CODE: AA

NO REF SOV: 011 OTHER: 014 ATD PRESS: 4116

Card 2/2 mjs

FRTISOVA, A.A., Cand Med Sci—(diss) "Effect of the dust factor in cotton-spinning factories on the health of the workers, and prophylactic measures." Ivanovo, 1958. 16 pp (Ivanovo State Med Inst), 200 copies (KL, 45-58, 153)

FETISOVA, A.A. (Ivanovo)

Effect of cotton dust on the health of workers of spinning factories. Gig. truda i prof. zab. 7 no.3:18-22 Mr '63 (MIRA 17:1)

1. Ivanovskiy meditsinskiy institut.

FETISOVA, A.G.

Treatment of trigeminal neuralgia. Probl. stom. 5:245-247 '60.
(MIRA 15:2)

1. Kiyevskiy institut usovershenstvovaniya vrachey.
(NEURALGIA, TRIGEMINAL)

FETISOVA, A.G. (Kiyev)

Rhinoplasty in partial defects of the nose. Probl.stom. 6:350-355 '62. (MIRA 16:3)

(NOSE--SURGERY)

FETISOVA, G.G.

Helioaerotherapy in the compound treatment of obliterating endarteritis. Sbor.trud.Iz.gos.nauch.-issl.inst.kur. i fizioter. 17:147-158 '62. (MIRA 17:7)

OKOPNIK, B.M.; FETISOVA, G.G.

Physical therapy in endarteritis obliterans. Vop. kur., fizioter. i lech. fiz. kul't. 27 no.1:46-48 '62. (MIRA 15:5)

1. Iz klinicheskogo otdela (zav. - prof. G.M.Freydovich) Uzbekskogo instituta kurortologii i fizioterapii imeni Semashko (dir. - dotsent Ya.K.Muminov) i Tashkentskoy gorodskoy fizioterapevticheskoy poliklinik (zav. - Z.N. Nazurullayev).
(ARTERIES--DISEASES) (PHYSICAL THERAPY)

FETISOVA, I. A.

Pathologicoanatomical changes in greater gerbils infected with the filariae Litomosa vite Krepkogorskaya, 1933. Trudy Inst. zool. AN Kazakh. SSR 16:210 '62. (MIRA 15:10)

(Kzyl-Orda Province—Filaria and filariasis)
(Kzyl-Orda Province—Parasites—Gerbils)

FETISOVA, I.A.

Infestation of greater gerbils by the filaria Litomoza vita Krepkogorskaja, 1933 in southern Kazakhstan. Trudy Inst. zool. AN Kazakh. SSR 19:93-96 '63. (MIRA 16:9)
(Kazakhstan--Filaria and filariasis)
(Kazakhstan--Parasites--Gerbils)

SPIVAK, M.Ya.; ARGUDAYEVA, N.A.; NABIYEV, E.G.; CHISTOVICH, G.N.; RIVLIN, M.I.; SEMENOV, M.Ya.; KRUGLIKOV, V.M.; SHAL'NEVA, A.M.; TITROVA, A.I.; RAYKIS, B.N.; MILYAYEVA, Ye.N.; BRUDNAYA, E.I.; GODINA, I.F.; VOL'FSON, G.I.; SOSONKO, S.M.; KOLESINSKAYA, L.A.; VYSOTSKIY, B.V.; MALYKH, F.S.; MIROTVORTSEV, Yu.I.; SYCHEVSKIY, P.T.; GOPACHENKO, I.M.; KARPITSKAYA, V.M.; FETISOVA, I.A.; MARTYNYUK, Yu.V.; EMDINA, I.A.

Annotations. Zhur. mikrobiol., epid. i immun. 40 no.3:128-131 Mr '63. (MIRA 17:2)

1. Iz Kemerovskogo meditsinskogo instituta i Kemerovskoy klinicheskoy bol'nitsy No.3 (for Spivak, Argudayeva). 2. Iz Kazanskogo instituta usovershenstvovaniya vrachey imeni Lenina (for Nabiyev). 3. Iz Leningradskogo kozhnogo dispansera No. 1 (for Chistovich, Rivlin). 4. Iz Rostovskoy oblastnoy sanitarno-epidemiologicheskoy stantsii (for Semenov). 5. Iz Stavropol'skogo instituta vaktsin i syvorotok (for Kruglikov, Shal'neva, Titrova, Raykis). 6. Iz Kuybyshevskogo instituta epidemiologii, mikrobiologii i gigiyeny i TSentral'nogo instituta usovershenstvovaniya vrachey (for Milyayeva). 7. Iz Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnoy gigiyeny Glavnogo sanitarnogo upravleniya Ministerstva putey soobshcheniya i Detskoy poliklinik st. Lyublino

(Continued on next card)

SPIVAK, M.Ya.------- (continued) Card 2.

Moskovskoy zheleznoy dorogi (for Brudnaya, Godina). 8. Iz Vrachebno-sanitarnoy sluzhby Severnoy zheleznoy dorogi (for Vol'fson, Sosonko, Kolesinskaya). 9. Iz Vladivostokskogo instituta epidemiologii, mikrobiologii i gigiyeny i Primorskoy krayevoy protivochumnoy stantsii (for Vysotskiy, Malykh, Mirotvortsev, Sychevskiy, Gopachenko). 10. Iz Yaroslavskogo meditsinskogo instituta (for Karpitskaya). 11. Iz Aralmorskoy protivochumnoy stantsii (for Fetisova). 12. Iz L'vovskogo instituta epidemiologii, mikrobiologii i gigiyeny (for Martynyuk, Emdina).

L 6835-65 EWT(1)/EWA(b) AMD JK

ACCESSION NR: AP4039936 S/C016/64/000/005/0058/0061

[illegible]isova, I. A.

TITLE: Pathogenic microflora of rodents in Kazakhstan

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, [illegible], 58-61

[illegible]: epizootiology, rodents, [illegible]

[illegible] a biological investigation [illegible]

ACCESSION NR: AP4039936

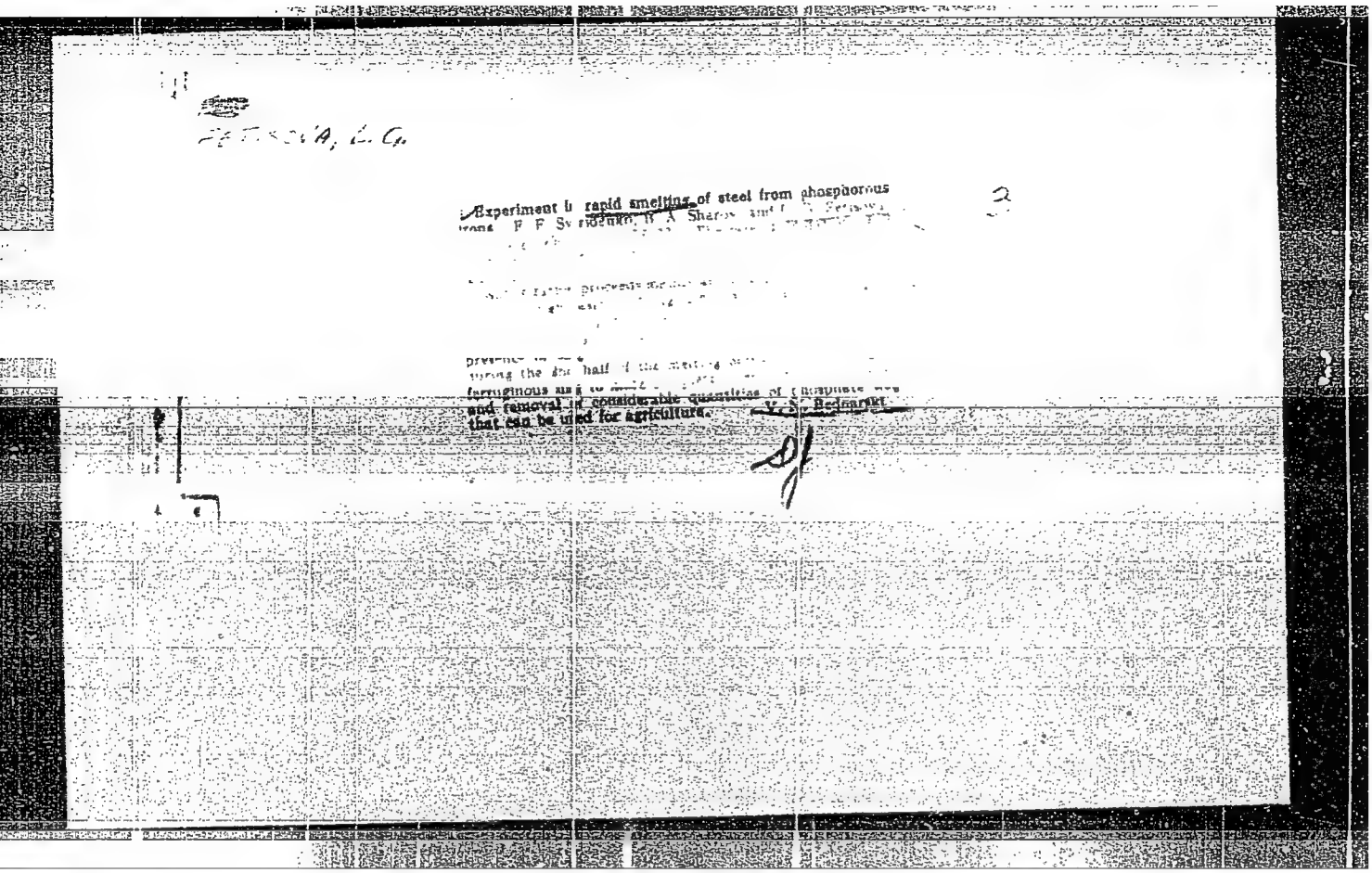
Erysipelothrix and Salmonella cultures are both pathogenic for white [illegible] tests occurring within 7 days after [illegible] animals [illegible] infected with Erisipelothrix [illegible] symptoms corresponding to acute [illegible] [illegible] tissue vessels, swollen peritonial [illegible] and [illegible] lung hyperemia. Organs of all the [illegible] [illegible] ...ns. Orig. art. has: [illegible]

ASSOCIATION: Aralomorskaya protivochumaya stantsiya (Aralmorskaya Antiplague Station)

SUBMITTED: 25Apr63 ENCL: 00 SUB CODE: LS

NR REF SOV: 007 OTHER: 000

Card 2/2



Experiment in rapid smelting of steel from phosphorous [illegible]

[illegible] ferruginous [illegible] and removal of considerable quantities of [illegible] that can be used for agriculture.

IVANOV, V.A.; KUCHMINA, N.Ya. FETISOVA, L.N.

Test with an isolated heart as a rapid method of a preliminary evaluation of the toxicity of sewage and its ingredients. Trudy Vor.med. inst. 47:41-46 '62 (MIRA 16:12)

1. Kafedra gigiyeny Voronezhskogo meditsinskogo instituta i laboratoriya Voronezhskogo filiala Vsesoyuznogo nauchno-issledovatel'skogo instituta sinteticheskogo kauchuka po kharakteristike stochnykh vod proizvodstva sinteticheskogo kauchuka.

FETISOVA, L. V., Cand Agr Sci -- (diss) 'Breeding work in the development and perfection of the Sychevskaya breed of cattle." Mos, 1957. 15 pp (All-Union Sci Res Inst of Animal Husbandry), 110 copies (KL, 17-58, 110)

L 20272-65 AMD Pb-4
ACCESSION NR: AR4045859 S/0299/64/000/014/M021/M022

SOURCE: Ref. zh. Biologiya. Svodnyy tom, Abs. 14M142

AUTHOR: Fetisova, M. A.

TITLE: Role of donor's age in homoplastic skin transplants in rats

CITED SOURCE: Sb. 3 Vses. konferentsiya po peresadke tkaney i - ov 1963. Yerevan, 1963, 478-479

TOPIC TAGS: homoplasty, skin, transplantation, rat, accretion, donor age

TRANSLATION: Conditions under which true accretion of a skin transplant takes place were investigated in experiments on rats. In one experimental series skin was taken from 2 to 3 days old donors, and in another experimental series skinwas taken from 2 to 3 mos old donors. Tolerance in the recipients was developed by Yefimov's method: an areactive state was induced in the animals by administering a 0.2 g/kg dose of medinal into the organism, 4 to 6 hrs later a 0.01 g/kg dose of aminazin was administered, and then donor proteins

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were given to the animals. In the first series animals were administered subcutaneously ground tissue prepared from the donor's internal organs and brain. In the other series rats were injected with a homogenate of internal organs, and pieces of brain were implanted under the skin. In the first series tolerance did not develop in a single case. All the transplants died. In the experiment where tolerance was induced with a homogenate injection and pieces of brain, accretion took place in 46% of the cases when skin was taken from newborn rats and in 12% of the cases with transplants from 2 to 3 mos old donors. All transplants died in the control series.

SUB CODE: LS ENCL: 00

PETROVA, M.A.

Development of tolerance in skin homoplasty in rats and the role of donor age in this process. Dokl. AN SSSR 158 no.6: 1451-1454 O '64. (MIRA 17:12)

1. Ryazanskiy meditsinskiy institut im. I.P. Pavlova. Predstavleno akademikom A.N. Bakulevym.

PETISOVA, N. M.

PETISOVA, N. M. --"Thermal Brittleness and Blue Brittleness of Certain Structural and Boiler Steels." *(Dissertations for Degrees in Science and Engineering Defended at USSR Higher Educational Institutions)Min of Higher Education USSR, Moscow Order of Labor Red Banner Higher Technical School imeni Bauman, Moscow, 1955

SC: Knizhnaya Letopis', No. 25, 18 Jun 55

* For Degree of Cand. of Technical Sciences

FETISOVA, M.M.

Effect of heat-treatment on blue brittleness in constructional steel. G. I. Pogodin-Alekseev and M. M. Fetisova. *Metalloved. i Obrabotka Metal.* 1956, No. 8, 31-4.—Impact tests at temps. from 20 to 600° were made on specimens of steel 55 (0.55% C, 0.6 Mn, 0.3 Si) that had been given various heat-treatments. All of the curves of impact strength and of ductility were similar in that they showed a rise up to about 100 to 200°, a fairly horizontal portion out to about 400°, a sharp min. near 650°, and a rapid rise at about 600°. The min. had its lowest value after annealing, 2.5 kg.-m., and its best value after quenching and tempering at 600°, 4.3. Subcrit. heat-treatments or repeated or prolonged treatments were not effective in significantly reducing blue brittleness. A. G. Guy

POGODIN-ALEKSEYEV, G.I., doktor tekhnicheskikh nauk, professor;
FETISOVA, M.M., kandidat tekhnicheskikh nauk.

Influence of chemical composition on the development of blue brittleness. [Trudy] MVTU no.70:36-50 '56 (MLRA 9:9)

(Steel alloys--Analysis)

FETISOVA, M. M. (Cand. Tech. Sci.): POGODIN-ALEKSEYEV, G. I. (Dr. Tech. Sci.);

"Change in Microstructure, Type of Fracture, Hardness, and Coercive Force of Steel in the Blue-Brittle State," Termicheskaya obrabotka i prochnost' metallov i splavov; sbornik statey (Heat Treatment and Strength of Metals and Alloys; Collection Articles) Moscow, Mashgiz, 1958, 177 p.

The authors' investigation led to the following conclusions:
1. The change in the type of fracture of the specimens corresponds to the change in toughness and plasticity in theblue-brittle temperature range. At testing temperatures of 100-400°C., the fracture changes from coarsely fibrous to finely fibrous. at 400° crystalline zones appear. At 525-500° the crystalline zones achieve their maximum extent, and the plane of fracture becomes "stepped", as if laminated. At higher temperatures, the fracture again becomes fibrous.
2. A microscopic study of crack distribution showed that at 525-550° the fracture ordinarily takes place along the grain boundaries, but in tough specimens it is usually transcrystalline. No substantial difference in the structure of tough and brittle specimens was observed at magnifications of up to 1700 times. 3. The hardness of specimens that were impact-tested at blue-brittle temperatures and cooled to room temperature was rather high as compared with specimens tested at lower temperatures. This indicated a certain residual brittleness caused by the impact test in the 500-550o range. 4. Measurement of the coercive force of brittle and tough specimens showed no numerical difference for specimens retaining some brittleness after being heated in the blue-brittle range. Hence it is seen that the development of blue brittleness is not accompanied by a decomposition of solid

FETISOVA, M. M. (Cont'd)

solutions. 5. On the basis of the above, it would appear that the marked lowering of plasticity caused by blue brittleness is associated with a deformation process or with diffusion processes developing at elevated temperatures in the boundary layers of the grains, which processes, however, do not lead to the precipitation of dissolved constituents, but do cause embrittlement of the grain boundaries. There are 3 references, all Soviet.

FETISOVA, M.M.

25(1) p.3 PHASE I BOOK EXPLOITATION SOV/1558

Moscow. Dom nauchno-tekhnicheskoy propagandy im. F.E. Dzerzhinskogo

Sovremennyye splavy i ikh termicheskaya obrabotka (Contemporary Alloys and Their Heat Treatment) Moscow, Mashgiz, 1958. 329 p. 12,000 copies printed.

Additional Sponsoring Agency: Obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy RSFSR.

Ed. (Title page): Yu. A. Geller, Doctor of Technical Sciences; Ed. (Inside book): V.V. Rzhavinskiy, Engineer; Tech. Ed.: B.I. Model'; Managing Ed. for Literatare on Metal Working and Tool Making; R.D. Beyzel'man, Engineer.

PURPOSE: The book is intended for engineering and technical personnel of heat-treatment shops and test laboratories of machine-building plants.

COVERAGE: This collection of 28 articles, compiled by 33 authors, aims to acquaint the reader with modern practice in the heat treatment of steels. The authors

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are primarily concerned with the development of various types of structural, tool, and heat-resistant steels and with the use of their alloying elements. Materials-handling equipment is described at some length. The treatment of alloys, particularly those of titanium, also comes within the scope of the collection. The book is thoroughly diagrammed, and a good deal of the material is shown in graphical form. Among the problems dealt with are the minimization of deformations, the introduction of the automatic control of heat-treating equipment, together with fully mechanized tool manufacture, and the optimum proportions of different alloying elements. There are numerous tables and drawings. Bibliographic listings placed at the end of chapters are predominantly Soviet. The articles comprising this collection are reports delivered at a conference held in the Scientific and Technical Propaganda House imeni F.E. Dzerzhinskiy in Moscow.

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Contemporary Alloys and Their Heat Treatment SOV/1558

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Contemporary Alloys and Their Heat Treatment SOV/1558

AVAILABLE: Library of Congress

GO/ksv
5-21-59

Card 6/6

SOV/137-58-11-23455

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 231 (USSR)

AUTHORS: Pogodin-Alekseyev, G. I., Fetisova, M. M.

TITLE: Changes Occurring in the Microstructure, Fracture Texture, Hardness, and Coercive Force of Steel in the Blue Brittle Stage (Izmeneniye mikrostruktury, vida izloma, tverdosti i koertsitivnoy sily stali pri sinelomkosti)

PERIODICAL: V sb.: Term. obrabotka i prochnost' metallov i splavov. Moscow, Mashgiz, 1958, pp 115-124

ABSTRACT: Specimens of steel St 55 were employed in investigations which were carried out in order to determine the nature of the failure of steel, both in the ductile state and in a state of blue brittleness, by observing the appearance of the fracture and the microstructure. The investigations also dealt with changes occurring in the hardness, microhardness, and coercive force of specimens subjected to impact tests at temperatures of 16, 150, 300, 400, 475, 500, 525, 550, 575, and 600°C. It was established that at testing temperatures ranging from 100 to 400° the fibrous nature of the fracture changes from a coarse to a fine structure; at a temperature of 400°, crystalline

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Changes Occurring in the Microstructure, Fracture Texture, Hardness, and (cont.)

regions appear on the surface of the fracture and attain their maximum magnitude at 525-550°. The fracture acquires fibrous characteristics again as the temperature is increased further. The hardness of specimens subjected to impact tests at temperatures of blue brittleness was found to be somewhat greater than the hardness of specimens tested at lower temperatures. Measurements of the coercive force failed to reveal any difference between the ductile and brittle specimens.

T. F.

PROTS'KO, Mark Alekseyevich; PETISOVA, M.P., red.; NAUMOV, K.M., tekhn.red.

[Dialectics of productive forces and production relations in a socialist society] Dialektika proizvoditel'nykh sil i proizvodstvennykh otnoshenii v sotsialisticheskom obshchestve. Moskva, Izd-vo VPSh i AON pri TsK KPSS, 1960. 115 p. (MIRA 13:12)

(Economics)

KEDROV, L.V.; KACHKO, I.L.; KOZLOVA, Z.V.; RUBASHKINA, T.S.; SIMONOV, I.G.; LUPEKIN, L.A.; BORISOVA, N.V.; FETISOVA, N.A.; VAYSBERG, I.Ye.; SUCHKOV, V.G.; KHRENNIKOV, N.S.; FILATOV, M.F., red.; ZMIYEVSKAYA, L.G., red.

[Flexible footwear] Gibkaia obuv'. Moskva, 1962. 38 p. (MIRA 17:8)

1. TSentral'nyy institut nauchno-tekhnicheskoy informatsii legkoy promyshlennosti.

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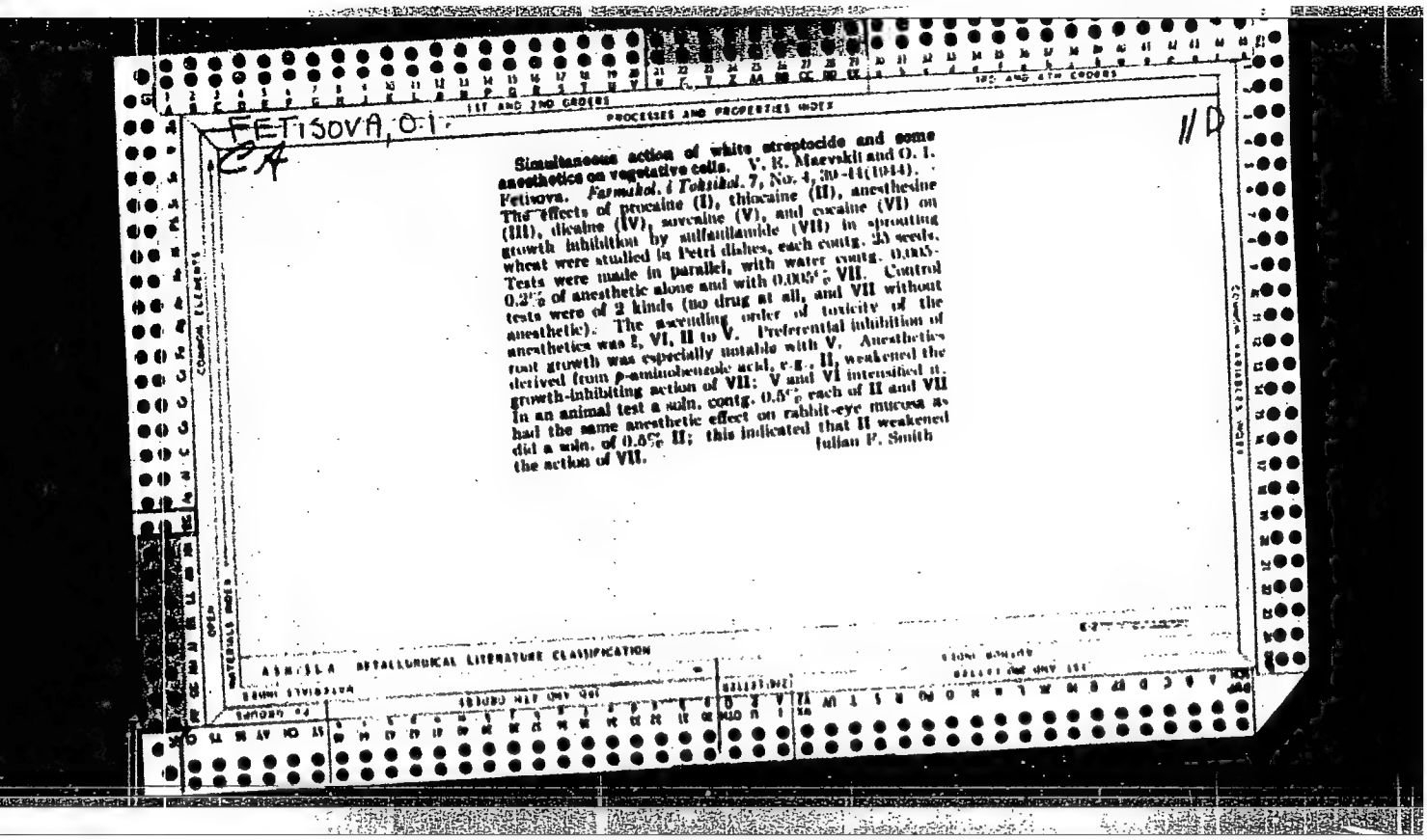

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Julian F. Smith

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Author : Fetisova T. V.
Inst : Dnepropetrovsk Med. Inst.
Title : Oxidation of Glucose in Muscles Following Application and After Removal of Hemostatic Tourniquet.

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(BLOOD--CIRCULATION, DISORDERS OF) (MUSCLE)

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(PHENOLS--PHYSIOLOGICAL EFFECT)
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